Sierra Nevada Conservancy Grant Program
Safe Drinking Water, Water Quality and Supply, Flood Control,
River and Coastal Protection Act of 2006 (Proposition 84)

County: **TULARE**

Applicant: **SEQUOIA NATURAL HISTORY ASSOCIATION**

Project Title: **CRYSTAL CAVE SOLAR GENERATION PROJECT**

Reference Number: **SNC 070233**

PROJECT SCOPE

The Sequoia Natural History Association will upgrade the lighting system in the Crystal Cave interpretive venue to improve the habitat for native plants and amphibians. This involves replacing the lighting within the cave and constructing a solar array to power the new lighting. In addition, the Association will develop and construct interpretive displays for the site. Specifically, the Association will:

- Design and construct a solar power generation facility for the site.
- Retrofit lighting within the cave to minimize impact on endemic and native species and curb the proliferation of invasive species.
- Install a generator as a back-up to the solar array.
- Design and construct educational displays for the site.
- Recruit staff and volunteers to assist with the lighting retro-fit project.
- Incorporate the energy-efficient technologies into the planned educational displays.

The Association will undertake these activities to provide an enhanced experience for visitors, provide supplemental education on the importance of the cave ecosystem relative to watershed health and native species, and to ensure a sustainable educational, recreational, and tourism venue retains its health and viability.

PROJECT SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Choose solar panel contractor for the project.	April 2008 – July 2008
Design interior lighting system with National Park Service Cave Specialist.	April 2008 – August 2008
Attain a National Park Service project officer.	March 2008 – May 2008
Install back-up generator.	June 2008 – August 2008
Begin design concept for educational displays.	June 2008 – August 2008
Recruit staff and volunteers for lighting upgrade and create work schedules.	June 2008 – August 2008
Purchase supplies for lighting upgrade: wiring, switches, lights, mounts	June 2008 – August 2008
Complete and submit six-month progress report to SNC	September 2008
Begin installation of interior lighting system.	September 2008 – October 2008
Develop construction plan for solar installation.	September 2008 – March 2009
Complete and submit twelve-month progress report to SNC	March 2009
Continue lighting system upgrade.	March 2009 – May 2009
Site preparation- tree trimming, trenching, pole excavation	March 2009 – May 2009
Have educational displays constructed	June 2009 – August 2009
Complete and submit eighteen-month progress report to SNC	September 2009

Install solar system	September 2009 – October 2009
Install educational displays	September 2009 – October 2009
Final Report/Final Payment Request	**April 2010**

PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
National Park Service site preparation	$2,700
Backup generator and installation	$15,000
Lighting system and peripheral equipment	$9,800
LED low-impact lights	$26,000
Solar power generation system and peripheral equipment	$143,000
Educational exhibits	$15,000
GRAND TOTAL	**$211,500**

Letters of Support:

- None submitted

Recommendation:

Recommend for funding at requested amount of $211,500.

Project Name: Crystal Cave Solar Generation Project

2. Project Summary

This project is being proposed by the Sequoia Natural History Association (SNHA), the member supported, non-profit 501(c)(3) partner to the National Park Service (NPS) in Sequoia and Kings Canyon National Parks (Tulare County). There are over 250 caves in the two national parks. The only cave in the parks open to the public, Crystal Cave in Sequoia National Park, has been operated by SNHA since 1983. Visitors get to experience the importance of this underground world on guided, educational tours that serve an average of 55,000 visitors each year from mid-May to late October. Crystal Cave is under strict management by the parks' cave specialist, confirming minimum impact on the cave environment through monitoring and annual restoration projects.

We currently need to replace the propane generator used to power the lighting system and other miscellaneous electronic devices used to operate tours. We seek a dependable, cost saving and more environmentally sustainable power source at the parks' most popular interpretive outlet. SNHA and NPS will install a 9.6 Kilowatt solar generation system to deliver the electrical needs of the daily operation. We are very enthusiastic about sending an important environmental message to the parks' visitors from around the world about supporting cleaner air and water, healthy ecosystems and alternative power choices.

The lighting system itself needs to be reduced and updated to a more efficient and less intrusive method. The cave is home to a variety of rare cave-adapted species. The current system is interrupting the natural ecosystem in the cave by causing the growth of exotic algae, moss and other plants not natural to this cave environment. An improved lighting system will ensure the future of this Sierra watershed and allow the ecosystem to function more naturally while still retaining its educational component.

We are requesting the funds to install educational displays at the cave tour waiting area. This is an excellent opportunity to address environmental issues including air and water quality, Sierra watershed and renewable energy products. This will be an ideal showcase of the National Parks' commitment to promoting energy efficient technologies in our public lands and encourage sustainable choices and overall awareness.

Site improvement work will include:
Installation of a solar generation system at the Crystal Cave parking lot; including the installation of an updated, more energy efficient lighting system inside the cave, a backup generator and educational displays providing cave visitors information on the importance of a healthy Sierra watershed.

The total project cost is $220,300. We have $4,000 currently allotted for the project from donations and a grant. We have $4,800 of in-kind services committed to the project. The total grant request is $211,500.